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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,547	03/23/2004	Chiaki Aoyama	IIP-115-A	2570
21828 7590 10/27/2008 CARRIER BLACKMAN AND ASSOCIATES 24101 NOVI ROAD SUITE 100 NOVI, MI 48375				
EXAMINER RASHID, DAVID				
ART UNIT 2624		PAPER NUMBER		
NOTIFICATION DATE 10/27/2008		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

cbalaw@gmail.com
cbalaw@ameritech.net
wblackman@ameritech.net

Office Action Summary

Application No.

10/806,547

Applicant(s)

AOYAMA, CHIAKI

Examiner

DAVID P. RASHID

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7 and 10-14 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-5, 7 and 10-14 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/5508)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

[1] A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 25, 2008 has been entered.

Amendments

[2] This office action is responsive to the claim amendment received on July 25, 2008. Claims 1-5, 7, and 10-14 remain pending.

Response to Arguments

[3] Remarks filed July 25, 2008 with respect to claims 1-5, 7, and 10-14 have been respectfully and fully considered, but not found persuasive.

Summary of Remarks

In response to Examiner's arguments stated in the Office Action (item 10, page 8) in relation to claims 2-5, 7 and 14, applicant respectfully disagrees with the Examiner's allegation - that, in his view, the claim language does not specifically point out how the claim language defines the claimed invention over the applied references - because applicant believes that each of independent claims 2, 3 and 7 was appropriately amended by including (at least some) allowable subject matter of claim 1 via Amendment-D of March 11, 2008 to define the claimed invention over the applied references.

Further, applicant respectfully disagrees with the Examiner assertion - that Tanabata et al. disclose the claimed limitations, i.e., a discrepancy being a minimum distance between the optical center and said incident beam of light, which, in his view, pose a pure geometric problem - because Tanabata et al. fail to disclose (or even suggest) the discrepancy being a minimum distance between the optical center and the incident beam of light, and because applicant believes that discrepancy being a minimum distance as required by the claimed invention is not a pure geometric problem.

Rather, Tanabata et al. disclose that the discrepancy used in calibration information for distance calculation, is a displacement of an image on an imaging plane produced by different passing positions obtained using a stored image. The displacement can be obtained by counting number of pixels of the displacement of the image in taking any one of the passing positions as the reference.

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Therefore, according to Tanabata et al., the displacement may be expressed by number of pixels. Accordingly, the displacement as taught by Tanabata et al. is not dependent upon a minimum distance between the optical center and the incident beam of light, as required by the claimed invention. Additionally, applicant respectfully submits that Tanabata et al., as shown in their Fig. 1, calculate the displacement of a refracted beam of light rather than that of an incident beam of light (as required by the claimed invention). As shown in Fig. 1 of Tanabata et al., incident light from a light source (dotted line) passes through a masking portion 110, representative opening parts 112a, 112b, and then through a lens 210, at which point the incident light becomes a refracted light. Therefore, according to Tanabata et al., the displacement discrepancy of the light is based on the refracted light, and not based on the incident beam of light, as required by the claimed invention.

(Applicant's Remarks at 13-14, July 25, 2008.)

Examiner's Response

Applicant's arguments with respect to claims 1-5, 7, and 10-14 have been considered but are moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 112

[4] The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

[5] **Claims 1-5, 7, and 10-14** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

M.P.E.P. § 2143.03 titled "Indefinite Limitations Must Be Considered"

If a claim is subject to more than one interpretation, at least one of which would render the claim unpatentable over the prior art, the examiner should reject the claim as indefinite under 35 U.S.C. 112, second paragraph (see MPEP § 706.03(d)) and should reject the claim over the prior art based on the interpretation of the claim that renders the prior art applicable. Ex parte Ionescu, 222 USPQ 537 (Bd. Pat. App. & Inter. 1984) (Claims on appeal were rejected on indefiniteness grounds only; the rejection was reversed and the case remanded to the examiner for consideration of pertinent prior art).

M.P.E.P. § 2143.03(I).

The Examiner finds two possibilities in relation to where the "object" exists in claims 1-5, 7, and 10-14. One possibility is that the object in question is outside the unit calculating a

discrepancy (i.e., the object itself does not lie strictly within the image, thus physically compensating the image), the other possibility is that the object in question does lie within the unit calculating a discrepancy (i.e., the object itself does lie within the image, thus compensating the image is a matter of changing its position within the image). The second possibility is the basis of all 35 USC § 103 and 35 USC § 101 rejections.

Claim Rejections - 35 USC § 101

[6] 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-2 and 10-13 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

A judicial exception claim is non-statutory for solely embodying an abstract idea, natural phenomenon, or law of nature. *See* M.P.E.P. § 2106(IV)(C)(2). However, a practical application of a judicial exception claim is a § 101 statutory claim “when it:

- (A) ‘transforms’ an article or physical object to a different state or thing [(i.e., a physical transformation, see below)]; or
- (B) otherwise produces a useful, concrete and tangible result, based on the factors discussed below. . . .” *Id.*

§ 101 statutory transformations of intangible articles or physical objects must be physical transformations (i.e., a physical component to the transformation must be involved). *See* M.P.E.P. § 2106(IV)(C)(2) (requiring the element “provides a transformation or reduction of an article to a different state of thing”, a “practical application by physical transformation”) and

Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility,
Official Gazette notice, 22 November 2005, Annex (II)(B)(iii); (III).

Image data (*e.g.*, a pixel) is a block of existing information as there is nothing tangible or physical about a image data itself (*i.e.*, a pixel could be equivalent to the value “101”, or signal representation of an image). A pixel is more representative of an information value or signal (an image block more representative of an information matrix) than something tangible or physical.

Furthermore, a claim including a method-step for inputting or outputting a pixel or image, but not indicating physically where the pixel or image is sent does not indicate a physical transformation, nor a useful, concrete and tangible result. The claim would require further information as to indicate physical location (*e.g.*, memory, display) for a complete physical transformation of an image signal (*e.g.*, pixel, image block) article. Claims 1-2 and 10-13 are non-statutory for being a judicial exception, an abstract idea.

[7] In addition, while claims 1-2 and 10-13 recite a series of steps or acts to be performed, a statutory “process” under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. *See Clarification of “Processes” under 35 U.S.C. 101*, Deputy Commissioner for Patent Examining Policy, John J. Love, May 15, 2008; *available at* http://www.uspto.gov/web/offices/pac/dapp/opla/prconotice/section_101_05_15_2008.pdf.

The instant claims neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process.

Claim Rejections - 35 USC § 103

[8] The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

[9] **Claims 1-3, 5, 7, 10, 12-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination between U.S. Reg. No. H000315 (published Aug. 4, 1987, hereinafter “Genco et al.”) in view of U.S. Patent No. 3,782,822 (issued Jan. 1, 1974, hereinafter “Spence”).

Regarding **claim 1**, while *Genco et al.* discloses a method for measuring a position (the positions in grid pattern item 32 at fig. 2) of an object (fig. 2, item 12) according to an image (fig. 2, item 34) of the object captured by a camera unit (fig. 2, item 18), the method comprising the steps of:

calculating a discrepancy (the discrepancy between item 30 and 34 in fig. 2) of an incident beam of light (“point source of light” item 12 at fig. 2) penetrating (fig. 2, item 36) a lens system of the camera unit relative to an optical center (“the optical center of the grid pattern 32 which was the location of the first image 30” at 3:51-62; fig. 2, item 30 obtained from fig. 1) of the lens system; and

wherein a distance between the object and the camera unit is not known prior to measuring the position of the object (*Genco et al.* does not disclose that said distance is known, thus it need not be known and thus not known);

wherein the incident beam of light is directly projected from the object to the lens system ("point light source 12 may be noncoherent light emitted by a small size ordinary penlight bulb" at 2:62-64); and

wherein said discrepancy (the discrepancy between item 30 and 34 in fig. 2) is a minimum distance (the discrepancy distance between item 30 and 34 in fig. 2 is minimal on the grid, as there is no other way of calculating a closer distance on the grid) between the optical center (fig. 2, item 30) and said incident beam of light ("point source of light" item 12 at fig. 2), *Genco et al.* does not disclose compensating the position of the object according to the discrepancy (i.e., moving item 36 to overlap item 30).

Spence teaches compensating a position of an object (the two circles at items 3-5) according to a discrepancy (discrepancy being the distance between the object and optical center item 21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the method of *Genco et al.* to include compensating the position of the object according to the discrepancy as taught by *Spence* "[t]o provide a new and improved variable power telescopic gun sight which contains a rangefinder, or stadia, and means for changing magnification power while simultaneously automatically adjusting the reticle or aim point to compensate for the trajectory of the bullet, whether or not the actual distance to the target is known" (*Spence*, 2:33-39).

Regarding **Claim 2**, while *Genco et al.* discloses a method for measuring a position (the positions in grid pattern item 32 at fig. 2) of an object (fig. 2, item 12) with a combination of an image (fig. 2, item 34) of the object captured by a camera unit (fig. 2, item 18) and calibration

information (fig. 1 is calibration to obtain item 30 of fig. 2), the calibration information being prepared in advance in such a manner that a position of a measurement pixel of the image is correlated with a direction (the direction of light directed from item 12 at fig. 2) of an incident beam of light ("point source of light" item 12 at fig. 2) and a displacement (the distance between items 30 and 36 in fig. 2) from a reference point (fig. 2, item 30) to the incident beam (fig. 10, item d), the method comprising the steps of:

- (a) incorporating the image (fig. 2, item 34 is incorporated);
- (b) detecting a position (where item 36 is on grid pattern item 32) of a pixel (fig. 2, item 36) representative of the object (fig. 2, item 12) in the image incorporated at step (a); and
- (c) calculating the position of the object according to the direction and the displacement of the incident beam (the grid pattern item 32 calculates the position of item 36, its displacement and direction with respect to the calibration information item 30), which are obtained from the calibration information (fig. 1 is calibration to obtain item 30 of fig. 2) with reference to the position (where item 36 is on grid pattern item 32) of the pixel (fig. 2, item 36) detected at step (b);

wherein the displacement of the incident beam of light relative to the reference point is a discrepancy of the incident beam of light relative to an optical center ("the optical center of the grid pattern 32 which was the location of the first image 30" at 3:51-62; fig. 2, item 30) of a lens of the camera unit;

wherein said discrepancy is a minimum distance (the discrepancy distance between item 30 and 34 in fig. 2 is minimal on the grid, as there is no other way of calculating a closer distance on the grid) between the optical center ("the optical center of the grid pattern 32 which was the

location of the first image 30” at 3:51-62; fig. 2, item 30) and said incident beam of light (fig. 2, item 36) is the minimum distance (the discrepancy distance between item 30 and 34 in fig. 2 is minimal on the grid, as there is no other way of calculating a closer distance on the grid) between the optical center (fig. 2, item 30 obtained from fig. 1) and said incident beam of light (fig. 2, item 36); and

wherein the incident beam of light directly projected from the object to the lens of the camera unit (“point light source 12 may be noncoherent light emitted by a small size ordinary penlight bulb” at 2:62-64), *Genco et al.* does not disclose compensating the position of the object according to the discrepancy (i.e., moving item 36 to overlap item 30).

Spence teaches compensating a position of an object (the two circles at items 3-5) according to a discrepancy (discrepancy being the distance between the object and optical center item 21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the method of *Genco et al.* to include compensating the position of the object according to the discrepancy as taught by *Spence* “[t]o provide a new and improved variable power telescopic gun sight which contains a rangefinder, or stadia, and means for changing magnification power while simultaneously automatically adjusting the reticle or aim point to compensate for the trajectory of the bullet, whether or not the actual distance to the target is known” (*Spence*, 2:33-39).

Regarding **claim 3**, claim 2 recites identical features as in claim 3. Thus, references/arguments equivalent to those presented above for claim 2 are equally applicable to claim 3.

Regarding **claim 5**, *Genco et al.* discloses wherein the pixel position detection means (fig. 2, items 24, 30-36) detects the position of the pixel representative of the object (fig. 2, item 12) having a marker (item 12 has a marker - itself) identifying a typical spot of the object (fig. 2, item 36 is a spot identifying item 12).

Regarding **claim 7**, claim 2 recites identical features as in the computer program for a computer ("microcomputer" at 4:1-2) used for an apparatus of claim 7. Thus, references/arguments equivalent to those presented above for claim 2 are equally applicable to claim 7.

Regarding **claim 10**, *Genco et al.* discloses wherein said discrepancy calculating step involves use of calibration information (fig. 1; fig. 2, item 30) prepared in advance, wherein said method further involves generating said calibration information in the steps of:

projecting a beam of light ("point source of light" item 12 at fig. 1) on individual pixels of a camera image (fig. 1, item 18);

according to the beam of light incident to each pixel, calculating a displacement (distance between item 30 and 34 at fig. 2) from a reference point (fig. 2, item 30) to the incident beam of light (the incident beam of light must be from item 12 of fig. 2); and

generating the calibration information (fig. 1, item 30) by correlating a direction and the displacement of the incident beam of light (the incident beam of light must be from item 12 of fig. 2) with a position of each pixel (fig. 1 memorizes the position and any displacement of item 30).

Regarding **claim 12**, *Genco et al.* discloses a method according to claim 2, wherein the camera unit (fig. 2, item 18) is adapted (the camera unit is "adapted" to be positioned on an

automobile since it is capable of being placed on top of an automobile it is hence “adapted”) to be positioned on an automobile.

Regarding **claim 13**, claim 12 recites identical features as in claim 13. Thus, references/arguments equivalent to those presented above for claim 12 are equally applicable to claim 13.

Regarding **claim 14**, claim 12 recites identical features as in claim 14. Thus, references/arguments equivalent to those presented above for claim 12 are equally applicable to claim 14.

[10] **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination between *Genco et al.* in view of *Spence* and U.S. Patent No. 4,639,878 (issued Jan. 27, 1987, “Day et al.”).

Regarding **claim 4**, while *Genco et al.* in view of *Spence* discloses the apparatus according to claim 3, *Genco et al.* in view of *Spence* does not teach wherein the camera unit comprises cameras in sets of at least two so as to take a plurality of images and the storage means stores the calibration information for each camera.

Day et al. discloses a system for automatically determining the position and attitude of an object (fig. 3) wherein the camera unit comprises cameras in sets of at least two (fig. 3, item 26) so as to take a plurality of images (6:65-66) and the storage means (fig. 3, item 42) stores the calibration information for each camera (8:20-24).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the apparatus of *Genco et al.* in view of *Spence* to include the camera unit comprising cameras in sets of at least two so as to take a plurality of images as taught by *Day et*

al. "...for automatically determining the position and attitude of a three-dimensional body...", *Day et al.*, 3:66-68 and the storage means storing the calibration information for each camera as taught by *Day et al.* for the computer 40 to access the information from the mass storage 42 for calculation purposes.

Conclusion

[11] Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID P. RASHID whose telephone number is (571)270-1578. The examiner can normally be reached Monday - Friday 7:30 - 17:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikram Bali can be reached on (571) 272-74155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David P. Rashid/
Examiner, Art Unit 2624

David P Rashid
Examiner
Art Unit 26244

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/Vikkram Bali/

Supervisory Patent Examiner, Art Unit 2624